

What is claimed is:

Sub A1

1. ~~A driving circuit of a display device for displaying~~
2. ~~a plurality of gray shades based on inputted digital image data~~
3. ~~comprising:~~

4. ~~gray shade voltage generating means for generating a~~

5. ~~plurality of voltages;~~

6. ~~gray shade voltage selecting means for selecting one~~

7. ~~voltage out of a plurality of voltages supplied from said gray~~

8. ~~shade voltage generating means based on high order bits composed~~

9. ~~of one or two and more bits counted from the most significant~~

10. ~~bit of said digital image data and the number of bits of which~~

11. ~~is smaller than that of said digital image data, and for outputting~~

12. ~~said voltage;~~

13. ~~an operational amplifier used to convert an impedance of~~

14. ~~a voltage outputted from said gray shade voltage selecting means;~~

15. ~~and~~

16. ~~voltage adjusting means for inducing a voltage rise or~~

17. ~~a voltage drop of a voltage outputted from said operational~~

18. ~~amplifier based on low order bits of said digital image data~~

19. ~~excluding said high order bits.~~

20.

Sub B2

1. ~~The driving circuit of the display device according~~
2. ~~to claim 1, wherein said voltage adjusting means is comprised~~
3. ~~of a resistor connected to an output terminal of said operational~~
4. ~~amplifier, an active device connected to said resistor and~~
5. ~~controlling means for controlling operations of said active~~
6. ~~device based on said low order bits.~~

*Sub
C2*

3. ~~The driving circuit of the display device according to claim 1, wherein said active device has a first transistor, a drain of which is connected to said resistor, a source of which supply power is applied to and a second transistor a drain of which is connected to said resistor, a source of which is connected to a ground and a gate voltage of which is controlled by said controlling means.~~

4.
1. ~~The driving circuit of the display device according to claim 1, wherein said resistor is composed of an analog switch.~~

1. ~~5. The driving circuit of the display device according to claim 1, wherein said gray shade voltage selecting means, when values between adjacent gray shade voltages are not equal, is used to select one voltage out of a plurality of voltages fed by said gray shade voltage generating means based on all bits of said digital image data and wherein said voltage adjusting means is used to output a voltage, as it is, outputted from said operational amplifier.~~

5.
1. ~~The driving circuit of the display device according to claim 1, wherein said gray shade voltage generating means is provided with two or more input terminals to which an voltage is inputted from outside and with dividing means used to divide voltages inputted into said input terminals into many voltages.~~

*Sub
C3*

1. ~~7. The driving circuit of the display device according to claim 1, wherein a voltage outputted from said gray shade voltage generating means is a positive polarity voltage or a~~

4 negative-polarity voltage.

5

1 8. ~~The driving circuit of the display device according~~
2 to claim 1, wherein, when the number of bits of said digital
3 image data is N, said high order bits are composed of (N-m) bits
4 counted from the most significant bit of said digital image data
5 and said low order bits are composed of m bits counted from the
6 least significant bit of the digital image data.

1 9. A driving circuit of a display device for displaying
2 a plurality of gray shades based on inputted digital image data
3 comprising:

4 gray shade voltage generating means for generating a
5 plurality of voltages;

6 gray shade voltage selecting means for selecting two or
7 more voltages out of a plurality of voltages supplied from said
8 gray shade voltage generating means based on high order bits
9 composed of one or two and more bits counting from the most
10 significant bit of said digital image data and the number of
11 bits of which is smaller than that of said digital image data;

12 dividing means for dividing two or more voltages outputted
13 from said gray shade voltage selecting means and for one divided
14 voltage based on low order bits of said digital image data
15 excluding said high order bits; and

16 an operational amplifier used to convert an impedance of
17 a voltage outputted from said dividing means.

1 10. The driving circuit of the display device according
2 to claim 9, wherein said gray shade voltage selecting means,

3 when values between adjacent gray shade voltages are not equal,
4 is used to select one voltage out of a plurality of voltages
5 supplied from said gray shade voltage generating means based
6 on all bits of said digital image data and to output said voltage.

1 11. The driving circuit of the display device according
2 to claim 9, wherein said gray shade voltage generating means
3 is provided with two or more input terminals to which an voltage
4 is inputted from outside and with dividing means used to divide
5 voltages inputted into said input terminals into many voltages.

1 12. The driving circuit of the display device according
2 to claim 9, wherein a voltage outputted from said gray shade
3 voltage generating means is a positive polarity voltage or a
4 negative polarity voltage.

1 13. The driving circuit of the display device according
2 to claim 9, wherein, when the number of bits of said digital
3 image data is N, said high order bits are composed of $(N-m)$ bits
4 counted from the most significant bit of said digital image data
5 and said low order bits are composed of m bits counted from the
6 least significant bit of the digital image data.

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C4